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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,332	05/31/2006	Wolfgang Warnke	06055599	6243
34431	7590	08/17/2007	EXAMINER	
HANLEY, FLIGHT & ZIMMERMAN, LLC			NGUYEN, HANH N	
150 S. WACKER DRIVE			ART UNIT	
SUITE 2100			PAPER NUMBER	
CHICAGO, IL 60606			2834	
			MAIL DATE	DELIVERY MODE
			08/17/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/581,332

Applicant(s)

WARNKE, WOLFGANG

Examiner

Nguyen N. Hanh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “commutator segments are oriented axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments” must be shown or the feature canceled from claim 7. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Inukai et al (US 2002/0180300).

Regarding claim 1, Inukai et al. disclose a fuel pump (paragraph 0009, lines 3-4) comprising an electromotive drive that has a commutator and carbon brushes (paragraph 0011, lines 11-12) which brush alternately against commutator segments as the commutator rotates, characterized in that the commutator segments (10) contain graphite (paragraph 0049 discloses segment 10 comprises carbon and graphite is a polymorph of the element carbon) and at least one commutator segment (10) contains graphite and an admixture of a material (paragraph 0058 discloses segment 10 comprises graphite and admixture of tin powder) that has a greater hardness than graphite (<http://www.ga.gov.au/education/minerals/glossary.html>, page 8 and <http://invsee.asu.edu/nmodules/Carbonmod/hardness.html>, page 1).

Regarding claim 2, Inukai et al. also disclose a fuel pump characterized in that the admixture material (tin powder) occurs in the form of individual particles in the graphite.

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Regarding claim 3, Inukai et al. also disclose a fuel pump characterized in that the particles (tin) are uniformly dispersed in the respective commutator segments (10 in Fig. 2).

Regarding claim 6, Inukai et al. also disclose a fuel pump characterized in that the commutator segments (10 in Fig. 2) are oriented radially in relation to the commutator axis and that the carbon brushes bear axially against the commutator segments (inherent).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4, 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inukai et al. in view of Sadatoshi (Patent Abstract of Japan 03226447, provided by the Applicant).

Regarding claim 4, Inukai et al. show all limitations of the claimed invention except showing the fuel pump characterized in that the admixture material is aluminum oxide.

However, Sadatoshi discloses a commutator for fuel pump characterized in that the admixture material is aluminum oxide ( $\text{Al}_2\text{O}_3$  as described in the Abstract) for the purpose of reducing amount of abrasion.

Since Inukai et al. and Sadatoshi are in the same field of endeavor, the purpose disclosed by Sadatoshi would have been recognized in the pertinent art of Inukai et al.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Inukai et al. by using aluminum oxide as the admixture material as taught by Sadatoshi for the purpose of reducing amount of abrasion.

Regarding claim 5, Sadatoshi also show fuel pump characterized in that the proportion of admixture material ( $\text{Al}_2\text{O}_3$ ) in the commutator is approximately 0.2% (more than .1%).

Regarding claim 8, Inukai et al. also disclose a fuel pump characterized in that all commutator segments (10) coming into contact with the carbon brushes contain the admixture material (tin).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inukai et al. in view of Sadatoshi (Patent Abstract of Japan 03226447, provided by the Applicant) and further in view of Hideyuki (Patent Abstract of Japan 02114835, provided by the Applicant).

Regarding claim 7, Inukai et al. and Sadatoshi show all limitations of the claimed invention except showing the fuel pump characterized in that the commutator segments are oriented axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments.

However, Hideyuki discloses a commutator for fuel pump characterized in that the commutator segments are oriented axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments (Fig. 1) for the purpose of reducing corrosion.

Since Inukai et al., Sadatoshi and Hideyuki are in the same field of endeavor, the purpose disclosed by Hideyuki would have been recognized in the pertinent art of Inukai et al. and Sadatoshi.

It would have been obvious at the time the invention was made to a person having an ordinary skill in the art to modify Inukai et al. and Sadatoshi by forming the commutator segments axially in relation to the commutator axis and that the carbon brushes bear radially against the commutator segments as taught by Hideyuki for the purpose of reducing corrosion.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN



August 13, 2007